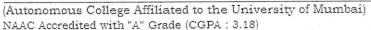


Shri Vile Parle Kelavani Mandal's

DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING





End Semester Examination (January 2023) Academic Year: 2022-2023

Minor in IoT and Industry 4.0

Program: Common for All Programs (except Electronics & Telecommunication Engineering)

Max. Marks: 75 Duration: 3 Hr.

Class: TE Semester: V

Course: Sensor Technology Course Code: DJ19MN8C1

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover page of the Answer Book, which is provided for their use.

- (1) This question paper contains two pages.
- (2) All Questions are Compulsory.
- (3) All questions carry equal marks.
- (4) Answer to each new question is to be started on a fresh page.
- (5) Figures in the brackets on the right indicate full marks.
- (6) Assume suitable data wherever required, but justify it.
- (7) Draw the neat labelled diagrams, wherever necessary.

Question No.		Max. Marks
Q1 (a)	Define Range, Sensitivity, Span, Error, Bandwidth.	[05]
Q1 (u)	OR	
_	What are the different types of Transducers?	[05]
Q1 (b)	i. What is the selection criteria of a transducer?	[05]
	ii. Draw and explain the working of Capacitive Transducer.	[05]
Q2 (a)	i. What is an Active Far Infrared (AFIR) Sensors?	[06]
	ii. Explain Thermister and give its specification.	[04]
*	OR	
	i. Explain the principle of Photodiodes.	[05]
	ii. What are Optical Actuators?	[05]
Q2 (b)	What are Thermomechanical Sensors and Actuators.?	[05]
Q3 (a)	Explain the construction and working of Stepper Motor briefly.	[05]
	OR	
	Classify Pressure Sensors and explain basic working of pressure sensors.	[05]
Q3 (b)	i. Describe Capacitive Position, Proximity, and Displacement Sensors.	[05]
	ii. Draw and explain Gyroscope draw.	[05]
	OR	
	i. Explain in brief different types of Accelerometers.	[05]
	ii. What is fluxgate magnetometer.	[05]
Q4 (a)	i. What are the functions of Data Loggers?	[05]
	ii. What is the need for Signal Conditioning?	[05]
	OR	50.57
	i. How is Wheatstone Bridge used for Signal Conditioning?	[05]
	ii. Explain Flash Type ADC.	[05]
Q4 (b)	Explain in brief Piezoelectric Crystal.	[05]



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(Autonomous College Affiliated to the University of Mumbai) NAAC Accredited with "A" Grade (CGPA': 3.18)

Q5 (a)	Solve any two.	.7m197
	i. Define thick and thin film sensors?	[05]
	i. What are the standards for smart sensor interface?	[05]
	iii. Write in brief about Home Appliance Sensors.	[05]
fg. i	iv. Explain in detail Sensors for Environmental Monitoring.	[05]
Q5 (b)	What is microelectromechanical systems.	[05]